
DEPARTMENT OF THE NAVY NFGS-01525G
NAVAL FACILITIES 30 September 2000
ENGINEERING COMMAND -----
GUIDE SPECIFICATION Superseding NFGS-01525F (03/00)

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SECTION 01525

SAFETY REQUIREMENTS

09/00

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SECTION 01525

SAFETY REQUIREMENTS 09/00

NOTE: This guide specification covers construction safety requirements and requirements for the protection of Government people, property and resources. It is intended for use in construction, renovation and demolition projects in the continental U.S. and overseas. The requirements of the guide specification supplement Army Corps of Engineers manual EM-385-1-1 and clarify safety concerns for high risk construction activities. All contracts require an Accident Prevention Plan with associated Activity Hazard Analysis (and related specific plans, programs, procedures) listed on pages A-3 and A-4 per COE EM-385-1-1. Some contracts may require additional special safety plans which should be included with respective sections of the specifications. For environmental remediation contracts, an APP is required with the overall contract and a site specific Health and Safety Plan is required for each task order. Contact the EFD/EFA Safety Manager for applicability. Many states and municipalities have more stringent or additional requirements and this section should be modified as required to suit local conditions and regulations.

NOTE: This revision "G" to NFGS-01525 amends the issue dated 31 March 2000 by adding and revising metrics in paragraph entitled "Safety Gas Containers" and adding LANTDIV regional requirements using tailoring options as denoted by change tags.

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A10.14	(1991) Construction and Demolition Operations - Requirements for Safety Belts, Harnesses, Lanyards and Lifelines for Construction and Demolition Use
ANSI Z359.1	(1992) Safety Requirements for Personal Fall Arrest Systems

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B30.5	(1994) Mobile Cranes
ASME B30.22	(1993) Articulating Boom Cranes

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910.94	Ventilation
29 CFR 1910.120	Hazardous Waste Operations and Emergency Response
29 CFR 1926.65	Hazardous Waste Operations and Emergency Response
29 CFR 1926.502(f)	Warning Line Systems

CORPS OF ENGINEERS (COE)

COE EM-385-1-1	(1996) Safety and Health Requirements Manual
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NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10	(1995) Portable Fire Extinguishers
NFPA 70	(1999) National Electrical Code
NFPA 241	(1996) Safeguarding Construction, Alteration, and Demolition Operations

1.2 DEFINITIONS

- [a. Certified Industrial Hygienist. An industrial hygienist is an individual who is certified by the American Board of Industrial Hygiene.]
- [b. Certified Safety Professional. A safety manager, safety specialist, or safety engineer that has passed the CSP exam administered by the Board of Certified Safety Professionals.]
- c. Competent Person. A competent person is one who is capable of

identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

- d. Confined Space. A space which by design has limited openings for entry and exit, unfavorable natural ventilation which could contain or produce dangerous air contaminants, and which is not intended for continuous employee occupancy. Confined spaces include, but are not limited to storage tanks, process vessels, pits, silos, vats, degreasers, reaction vessels, boilers, ventilation and exhaust ducts, sewers, tunnels, underground utility vaults, and pipelines.
- e. First Aid. First aid is any one-time treatment, and any follow-up visit for the purpose of observation, of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care, even though provided by a physician or registered professional personnel.
- f. Health and Safety Plan (HASP). The HASP is the Navy equivalent Army term of SHP or SSHP used in COE EM-385-1-1. "USACE" property and equipment specified in COE EM-385-1-1 should be interpreted as Government property and equipment.
- g. Lost Workdays. The number of days (consecutive or not) after, but not including, the day of injury or illness during which the employee would have worked but could not do so; that is, could not perform all or part of his normal assignment during all or any part of the workday or shift; because of the occupational injury or illness.
- h. Medical Treatment. Medical treatment includes treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even though provided by a physician or registered personnel.
- i. Multi-employer work site (MEWS). A multi-employer work site, as defined by OSHA, is one in which many employers occupy the same site. The Navy considers the prime contractor to be the "controlling authority" for all work site safety and health of the subcontractors.
- j. Operating Envelope. There is an "operating envelope" around any crane, and inside the envelope are the operator, riggers, rigging gear between the hook and the load, the load and the crane's supporting structure (ground, rail, etc.).
- k. Qualified Person. One who, by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems related to the subject matter, the work or the project.

1. Recordable Occupational Injuries or Illnesses. Any occupational injuries or illnesses which result in:
 - (1) Fatalities, regardless of the time between the injury and death, or the length of the illness; or
 - (2) Lost Workday Cases, other than fatalities, that result in lost workdays, or
 - (3) Non-Fatal Cases without lost workdays which result in transfer to another job or termination of employment, or require medical treatment (other than first aid) or involve: loss of consciousness or restriction of work or motion. This category also includes any diagnosed occupational illnesses which are reported to the employer but are not classified as fatalities or lost workday cases.
- m. Safety Officer. The superintendent or other qualified or competent person who is responsible for the on-site safety required for the project. The contractor quality control person cannot be the safety officer, even though the QC has safety inspection responsibilities as part of the QC duties.
- n. Serious Accidents. Any work-related incident, which results in, a fatality, in-patient hospitalization of three or more employees, or property damage in excess of \$200,000.
- o. Significant Accident. Any contractor accident which involves falls of 1.2 m (4 feet) or more, electrical accidents, confined space accidents, diving accidents, equipment accidents, crane accident or fire accidents, which, result in property damage of \$10,000 or more, but less than \$200,000; or when fire department or emergency medical treatment (EMT) assistance is required.
- p. Weight Handling Equipment (WHE) Accident. A WHE accident occurs when any one or more of the six elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in personnel injury or death; material or equipment damage; dropped load; derailment; two-blocking; overload; and collision, including unplanned contact between the load, crane, and/or other objects. A dropped load, derailment, two-blocking, overload and collision are considered accidents even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped load, roll over, etc.).

1.3 SUBMITTALS

NOTE: The "G" in submittal tags following each

submittal item indicates Government approval and should be retained. Add "G" in submittal tags following any added submittals that are determined to require Government approval. Submittal items not designated with a "G" will be approved by the QC organization. Item c, Health and Safety Plan is reserved for projects where hazardous material handling/removal operations are anticipated.

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-07 Certificates

Accident Prevention Plan (APP); G

Activity Hazard Analysis (AHA); G

Health and Safety Plan (HASP); G

SD-11 Closeout Submittals

Daily Confined Space Entry Permit

Submit one copy of each permit attached to each Daily Production Report.

Reports

Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports."

Crane Reports

Crane Critical Lift Plan

Certificate of Compliance

1.4 QUALITY ASSURANCE

[1.4.1 Safety Specialist

NOTE: Specify a Safety Specialist only for very large or complex projects.

Provide a Safety Specialist at the work site to perform safety management, surveillance, inspections, and safety enforcement for the contractor. The Safety Specialist shall be the safety "competent person" as defined by COE EM-385-1-1. The Safety Specialist shall be at the work site at all times whenever work or testing is being performed, shall conduct daily safety inspections and shall have no other duties other than safety management,

inspections, and safety enforcement on this contract.

1.4.2 Qualifications

a. Qualifications of Safety Officer:

- (1) Ability to manage the on-site contractor safety program through appropriate management controls.
- (2) Ability to identify hazards and have the capability to expend resources necessary to abate the hazards.
- (3) Must have worked on similar types of projects that are equal to or exceed the scope of the project assigned with the same responsibilities.
- (4) Shall, as a minimum, have attended an OSHA training qualification class including at least 10 hours of classroom instruction.

b. Qualifications of Qualified Person, Confined Space Entry. The qualified person shall be capable (by education and specialized training) of anticipating, recognizing, and evaluating employee exposure to hazardous substances or other unsafe conditions in a confined space. This person shall be capable of specifying necessary control and protective action to ensure worker safety. [Since this work involves marine operations that handle combustible or hazardous materials, this qualified person shall be a NFPA certified marine chemist.]

c. Qualification of Crane Operators. Crane operators shall meet the requirements in COE EM-385-1-1, Appendix G.

1.4.3 Meetings

1.4.3.1 Preconstruction Conference

The safety officer shall attend the preconstruction conference.

1.4.3.2 Meeting on Work Procedures

- ##### a. Meet with Contracting Officer to discuss work procedures and safety precautions required by the APP. Ensure the participation of the contractor's superintendent, the quality control, and the CSP or CIH.

NOTE: Include this requirement only for projects which require a Health and Safety Plan.

- ##### b. Meet with Contracting Officer to discuss work procedures and safety precautions required by the HASP. Ensure the participation of the contractor's superintendent, the quality control, and the

CSP or CIH.

]1.4.3.3 Weekly Safety Meetings

Hold weekly at the project site. Attach minutes showing contract title, signatures of attendees and a list of topics discussed to the QC Contractor Quality Control daily report.

1.4.3.4 Work Phase Meetings

The appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection.

1.4.3.5 New Employee Indoctrination

New employees will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.

1.4.4 Certifications

1.4.4.1 Accident Prevention Plan (APP)

Submit the APP at least 15 calendar days prior to start of work at the job site, following Appendix A of COE EM-385-1-1. Make the APP site specific. Notice To Proceed will be given after Government finds the APP acceptable.

1.4.4.2 Activity Hazard Analysis (AHA)

Submit the AHA for review at least 15 calendar days prior to the start of each phase. Format subsequent AHA as amendments to the APP. In accordance with contract quality control requirements each AHA will be reviewed during an on-site preparatory inspection.

[1.4.4.3 Health and Safety Plan (HASP)

Submit the HASP for projects involving the handling of hazardous materials and allow 30 calendar days for review by Naval Environmental Health Center (NEHC) for health hazard review and Naval Facilities Engineering Command, Engineering Field Division (EFD) or Engineering Field Activity (EFA) construction safety manager. The Contracting Officer will act on the HASP only after 30 day NEHC and EFD/EFA safety manager reviews.

]1.4.5 Reports

1.4.5.1 Crane Reports

Submit crane inspection reports required in accordance with COE EM-385-1-1 and as specified herein with Daily Reports of Inspections.

1.4.5.2 Crane Critical Lift Plan

Submit crane critical lift plan COE EM-385-1-1 section 16 when crane loads

meet or exceed 75 percent of the crane load capacity in any configuration.

1.4.5.3 Certificate of Compliance

The Contractor shall provide a Certificate of Compliance for each crane entering a Naval activity under this contract (see ROICC for a blank certificate). Certificate shall state that the crane and rigging gear meet applicable OSHA regulations (with the contractor citing which OSHA regulations are applicable, e.g., cranes used in construction, demolition, or maintenance shall comply with 29 CFR 1926. Certify on the Certificate of Compliance that the crane operator(s) is qualified and trained in the operation of the crane to be used. [For cranes at Naval activities in foreign countries, the Contractor shall certify that the crane and rigging gear conform to the appropriate host country safety standards.] The Contractor shall also certify that all of its crane operators working on the Naval activity have been trained not to bypass safety device (e.g., anti-two block devices) during lifting operations. These certifications shall be posted on the crane.

1.5 ACCIDENT PREVENTION PLAN (APP)

Prepare the APP in accordance with the required and advisory provisions of COE EM-385-1-1 including Appendix A, "Minimum Basic Outline for Preparation of Accident Prevention Plan," and as modified herein. Include the associated AHA and other specific plans, programs and procedures listed on Pages A-3 and A-4 of COE EM-385-1-1, some of which are listed below.

1.5.1 Contents of the Accident Prevention Plan

- a. Name and safety related qualifications of safety officer (including training and any certifications).
- b. Qualifications of competent and of qualified persons.
- c. Identity of the individual who will complete exposure data (hours worked); accident investigations, reports and logs; and immediate notification of accidents to include subcontractors.
- d. Emergency response plan. Conform to COE EM-385-1-1, paragraph 01.E and include a map denoting the route to the nearest emergency care facility with emergency phone numbers. Contractor may be required to demonstrate emergency response.
- e. Confined Space Entry Plan. Identify the qualified person's name and qualifications, training, and experience. Delineate the qualified person's authority to direct work stoppage in the event of hazardous conditions. Include procedure for rescue by contractor personnel and the coordination with emergency responders. (If there is no confined space work, include a statement that no confined space work exists and none will be created.)
- [f. Hazardous Material Use. Provisions to deal with hazardous materials, pursuant to the Contract Clause "FAR 52.223-3,

Hazardous Material Identification and Material Safety Data." And the following:

- (1) Inventory of hazardous materials to be introduced to the site with estimated quantities.
 - (2) Plan for protecting personnel and property during the transport, storage and use of the materials.
 - (3) Emergency procedures for spill response and disposal, including a site map with approximate quantities on site at any given time. The site map will be attached to the inventory, showing where the hazardous substances are stored.
 - (4) Material Safety Data Sheets for inventoried materials not required in other section of this specification.
 - (5) Labeling system to identify contents on all containers on-site.
 - (6) Plan for communicating high health hazards to employees and adjacent occupants.]
- g. Hazardous Energy Control Plan. For hazardous energy sources, comply with COE EM-385-1-1, paragraph 12.A.07.
- [h. Critical Lift Plan. Weight handling critical lift plans shall be prepared and signed in accordance with COE EM-385-1-1, paragraph 16.c.18.]
- i. Alcohol and Drug Abuse Plan
- (1) Describe plan for random checks and testing with pre-employment screening in accordance with the DFAR Clause subpart 252.223-7004, "Drug Free Work Force."
 - (2) Description of the on-site prevention program
- j. Fall Protection and Prevention (FP&P) Plan. The plan shall be site specific and address all fall hazards in the work place. It shall address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 1.8 m 6 feet. A qualified person shall prepare the plan. The plan shall include fall protection and prevention systems, equipment and methods employed, responsibilities, rescue and escape equipment and operations, training requirements, and monitoring methods. FP&P Plan shall be revised [once every six months] for lengthy projects, to reflect any new changes during the course of construction, due to changes of personnel, equipment, systems or work habits.
- k. Silica Exposure Reduction. The plan shall include specific procedures to prevent employee silica inhalation exposures.

- [l. Lead Abatement Plan. The safety and health aspects of lead-based paint removal, prepared in accordance with Section 13283, "Removal and Disposal of Lead Containing Paint"].
- [m. Asbestos Abatement Plan. The safety and health aspects prepared in accordance with Section 13281, "Engineering Control of Asbestos Containing Materials"]
- [n. Site Demolition Plan. The safety and health aspects prepared in accordance with Section 02220, "Site Demolition" and referenced sources] [Include engineering survey as applicable.]
- [o. Excavation Plan. The safety and health aspects prepared in accordance with Section 02302, "Excavation, Backfilling, and Compacting for Utilities"]
- p. Training Records and Requirements. List of mandatory training and certifications which are applicable to this project (e.g. explosive actuated tools, confined space entry, fall protection, crane operation, vehicle operator, forklift operators, personal protective equipment); list of requirements for periodic retraining/certification; outline requirements for supervisory and employee safety meetings.
- q. Severe Weather Plan. Procedures of ceasing on-site operations during lightning or upon reaching maximum allowed wind velocities.
- r. Emergency Lighting and Power Systems Plan (e.g. periodic testing of batteries for emergency lighting.)

1.5.2 Hazardous Material Use

Each hazardous material must receive approval prior to bringing onto the job site or prior to any other use in connection with this contract. Allow a minimum of 10 working days for processing of the request for use of a hazardous material. Any work or storage involving hazardous chemicals or materials must be done in a manner that will not expose government employees to any unsafe or unhealthful conditions. Adequate protective measures must be taken to prevent government employees from being exposed to any hazardous condition that could result from the work or storage. Approval by the Contracting Officer of protective measures and storage area is required prior to the start of the work.

1.6 ACTIVITY HAZARD ANALYSIS (AHA)

Prepare for each phase of the work. As a minimum, define activity being performed, sequence of work, specific hazards anticipated, control measures to eliminate or reduce each hazard to acceptable levels, training requirements for all involved, and the competent person in charge of that phase of work. For work with fall hazards, including fall hazards associated with scaffold erection and removal, identify the appropriate fall arrest systems. For work with materials handling equipment, address safeguarding measures related to materials handling equipment. For work requiring excavations, include excavation safeguarding requirements. The

appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection.

[1.7 HEALTH AND SAFETY PLAN (HASP)

NOTE: Include the following for projects where work involves hazardous waste work as directed by EFD/EFA environmental personnel or safety manager. An APP is separately required to define the "construction hazards" of HAZWASTE projects.

Prepare as required by 29 CFR 1910.120 and COE EM-385-1-1.

1.7.1 Qualified Personnel

Retain a Certified Industrial Hygienist (CIH) or a Certified Safety Professional (CSP) to prepare the HASP, conduct activity hazard analyses, and prepare detailed plan for demolition, removal, and disposal of materials. [Retain the CIH or CSP for duration of contract.]

1.7.2 Contents

In addition to the requirements of COE EM-385-1-1, Table 28-1, the HASP must include:

- a. Location, size, and details of control areas.
- b. Location and details of decontamination systems.
- c. Interface of trades involved in the construction.
- d. Sequencing of work.
- e. Disposal plan.
- f. Sampling protocols.
- g. Testing labs.
- h. Protective equipment.
- i. Pollution control.
- j. Evidence of compliance with 29 CFR 1910.120 and 29 CFR 1926.65.
- k. Training and certifications of CIH, CSP or other competent persons.

]1.8 DRUG PREVENTION PROGRAM

Conduct a proactive drug and alcohol use prevention program for all workers, prime and subcontractor, on the site. Ensure that no employees

either use illegal drugs or consume alcohol during work hours. Ensure there are no employees under the influence of drugs or alcohol during work hours. After accidents, collect blood, urine or saliva specimens and test injured employee's influence. A copy of the test shall be made available to the Contracting Officer upon request.

1.9 FALL HAZARD PROTECTION AND PREVENTION PROGRAM

**NOTE: Use this requirement if there will be any
exposure to fall hazards.**

1.9.1 Scaffolds

Delineate the fall protection requirements necessary during the erection and dismantling operation of scaffolds used on the project in the Fall Protection and Prevention (FP&P) plan and activity hazard analysis for the phase of work.

1.9.2 Training

Institute a fall protection training program. As part of the Fall Hazard Protection and Prevention Program, Contractor shall provide training for each employee who might be exposed to fall hazards.

1.10 DUTIES OF THE SAFETY OFFICER

- a. Ensure construction hazards are identified and corrected.
- b. Maintain applicable safety reference material on the job site.
- c. Maintain a log of safety inspections performed.

**NOTE: Include the requirement below only when a
preconstruction conference is specified for the
project.**

- d. Attend the pre-construction conference as required.
- e. Identify hazardous conditions and take corrective action. Failure to do so will result in a dismissal from the site, with a work stoppage pending approval of suitable replacement personnel.

1.11 DISPLAY OF SAFETY INFORMATION

Display the following information in clear view of the on-site construction personnel:

- a. Map denoting the route to the nearest emergency care facility with emergency phone numbers.

b. AHA

c. Confined space entry permit.

[d. A sign indicating the number of hours worked since last lost
workday accident.]

1.12 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment manufacturers' manuals.

[1.13 HIGH HAZARD WORK AND LONG DURATION

Work under this contract is potentially hazardous. Pursuant to contract clause "FAR 52.236-13, Accident Prevention, Alternate I," submit in writing additional proposals for effecting accident prevention under hazardous conditions. Meet in conference with Contracting Officer to discuss and develop mutual understanding relative to the administration of the overall safety program.

]1.14 EMERGENCY MEDICAL TREATMENT

Contractors will arrange for their own emergency medical treatment. Government has no responsibility to provide emergency medical treatment. However, if emergency medical care is rendered by Navy medical services, charges may be billed to Contractor at prevailing rates established in BUMED Instruction 6320.4 series. Reimbursement shall be made by Contractor to Naval Regional Medical Center Collection Agent upon receipt of monthly statement.

1.15 SITE CONDITIONS

NOTE: Noise exposure from adjacent Government activities must be evaluated based on the exposure potential of the construction site to the Government activities. These activities may require the Contractor to provide a hearing protection program for his employees far in excess of what his work would require. If so, include the criteria so that it is part of the contract that the Contractor bids on. Add the following sentences if warranted.

1.15.1 Noise

The adjacent Government activities produce sound-pressure levels of [_____] dBA steady state, or [_____] dBA for [_____] minutes, or [_____]. Enforce hearing protection protecting contractor's site personnel from Government produced noise.

1.16 REPORTS

1.16.1 Accident Reports

- a. For recordable occupational injuries and illnesses, the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the Navy Contractor Significant Incident Report (CSIR) form and provide to the Contracting Officer within 5 calendar days of the accident. The Contracting Officer will provide a copy of the CSIR form.
- b. For a weight handling equipment accident the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the WHE Accident Report form and provide to the Contracting Officer within 30 calendar days of the accident. The Contracting Officer will provide a blank copy of the WHE accident report form.

1.16.2 Notification

Notify the Contracting Officer as soon as practical, but not later than four hours, of any accident meeting the definition of Recordable Occupational Injuries or Illnesses or Significant Accidents. Information shall include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; and brief description of accident (to include type of construction equipment used, PPE used, etc.).

1.16.3 Monthly Exposure Report

Monthly exposure reporting, to the Contracting Officer is required to be attached to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor.

1.16.4 OSHA Citations and Violations

Provide the Contracting Officer with a copy of each OSHA citation, OSHA report and contractor response. Correct violations and citations promptly and provide written corrective actions to the Contracting Officer.

1.16.5 Crane Notification

Notify Contracting Officer at least 15 days prior to bringing any crane equipment on-site so that the contracting officer may arrange for any additional quality assurance spot checks necessary by the government.

1.17 HOT WORK

NOTE: For LANTNAVFACENGCOM, include the following paragraph for projects in the Mediterranean area.

Prior to performing "Hot Work" (welding, etc.) or operating other flame-producing devices, the Contractor shall request a written permit from the Fire Division. CONTRACTORS ARE REQUIRED TO MEET ALL CRITERIA BEFORE A PERMIT IS ISSUED. The Contractor will provide at least two (@2) twenty (20) pound extinguishers for normal "Hot Work". All extinguishers shall be current inspection tagged, approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity.

- a. Oil painting materials (paint, brushes, empty paint cans, etc.), and all flammable liquids shall be removed from the building at quitting time. All painting materials and flammable liquids shall be stored outside in a suitable metal locker or box and will require re-submittal with non-hazardous materials.
- b. Accumulation of trays, paper, shavings, sawdust, boxes and other packing materials shall be removed from the building at the close of each workday and such material disposed of in the proper containers located away from the building.
- c. The storage of combustible supplies shall be a safe distance from structures.
- d. Area outside of building undergoing work shall be cleaned of trash, paper, or other discarded combustibles at the close of each workday.
- e. All portable electric devices (saws, sanders, compressors, extension chord, lights, etc.) shall be disconnected at the close of each workday. When possible, the main electric switch in the building shall be deactivated.
- f. When starting work in building or areas, Contractors shall require their personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency Fire Division phone number. ANY FIRE, NO MATTER HOW SMALL, SHALL BE REPORTED TO THE ROICC/BASE FIRE DIVISION IMMEDIATELY.

PART 2 PRODUCTS

[2.1 FALL PROTECTION ANCHORAGE

Fall protection anchorage, conforming to ANSI Z359.1, will be left in place and so identified for continued customer use.

]2.2 CONFINED SPACE SIGNAGE

Provide permanent signs integral to or securely attached to access covers for new permit required confined spaces. Signs wording: "DANGER--PERMIT REQUIRED CONFINED SPACE - DO NOT ENTER -" on bold letters a minimum of 25 mm one inch in height and constructed to be clearly legible with all paint removed. The signal word "DANGER" shall be red and readable from 1.52 m 5 feet.

PART 3 EXECUTION

3.1 CONSTRUCTION

Comply with COE EM-385-1-1, NFPA 241, the accident prevention plan, the activity hazard analysis and other related submittals and activity fire and safety regulations.

3.1.1 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocyanates, lead-based paint are prohibited. Exceptions to the use of any of the above excluded materials may be considered by Contracting Officer upon written request by Contractor.

3.1.2 Unforeseen Hazardous Material

The design should have identified materials such as PCB, lead paint, and friable and nonfriable asbestos. If [additional] material, not indicated, that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Contracting Officer immediately. Within [14] [_____] calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2, Differing Site Conditions."

3.2 PRE-OUTAGE COORDINATION MEETING

Contractors are required to apply for utility outages a minimum of 15 days in advance. As a minimum, the request should include the location of the outage, utilities being effected, duration of outage and any necessary sketches. Special requirements for electrical outage requests are contained elsewhere in this specification section. Once approved and prior to beginning work on the utility system requiring shut down, the Contractor shall attend a pre-outage coordination meeting with the ROICC and the Station Utilities Department to review the scope of work and the lock out/tag out procedures for worker protection. No work will be performed on energized electrical equipment unless proven impassable. Working equipment "hot" must be considered the last option.

3.3 PERSONNEL PROTECTION

3.3.1 Hazardous Noise

Provide hazardous noise signs, and hearing protection, wherever equipment and work procedures produce sound-pressure levels greater than 85 dBA steady state or 140 dBA impulse, regardless of the duration of the exposure.

3.3.2 Fall Protection

Enforce use of the fall protection device designated for each specific work activity in the FP&P plan and/or AHA all times when an employee is on a surface 1.8 m 6 feet or more above lower levels. Personal fall arrest systems are required when working from an articulating or extendible boom, scissor lifts, swing stages, or suspended platform. Fall protection must comply with ANSI A10.14.

3.3.2.1 Personal Fall Arrest Device

Personal fall arrest device equipment, systems, subsystems, and components shall meet ANSI Z359.1, "Safety Requirements for Personal Fall Arrest Systems". Only a full-body harness with a shock absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest device. Body belts may only be used as a positioning device system such as steel reinforcing assembly and in conjunction with another fall arrest system. Harnesses shall have a fall arrest attachment, which is a connector, affixed to the body support (usually a D-ring) and specifically designated for attachment to the rest of the system. Only double locking snap hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber.

3.3.2.2 Fall Protection for Roofing Work

Fall protection controls shall be implemented based on the type of roof being constructed and work being performed. The roof area to be accessed shall be evaluated for its structural integrity including weight-bearing capabilities for the projected loading.

a. Low Sloped Roofs:

(1) For work within 1.8 m 6 feet of an edge, on low-slope roofs, personnel shall be protected from falling by use of personal fall arrest systems, guardrails, or safety nets. Safety monitoring system is not adequate fall protection and is not authorized.

(2) For work greater than 1.8 m 6 feet from an edge, warning lines shall be erected and installed in accordance with 29 CFR 1926.502(f).

b. Steep Roofs: Work on steep roofs requires personal fall arrest system, guardrails with toe-boards, or safety nets. This requirement also includes residential or housing type construction.

3.3.2.3 Safety Nets

If safety nets are used as the selected fall protection system on the project, they shall be provided at unguarded workplaces, over water, machinery, dangerous operations and leading edge work.

3.3.2.4 Existing Anchorage

Existing anchorages, used for attachment of personal fall arrest equipment, if to be used by the Contractor, shall be re-certified by the contractor's fall protection engineer (QP).

[3.3.3 Shipyard Requirements

**NOTE: Add for projects at the Norfolk Naval
Shipyard (NNSY)**

All personnel who enter the Controlled Industrial Area (CIA) will wear mandatory personal protective equipment (PPE) at all times. All personnel shall also comply with PPE postings of shops both inside and outside the CIA. PPE shall be governed in all other areas by the nature of the work the employee is performing. They will also have personal hearing protection on their person at all times in designated noise hazardous areas or when performing noise hazardous tasks. Mandatory PPE includes:

- a. Hard Hat
- b. Safety Glasses
- c. Safety Toed Shoes

]3.4 SCAFFOLDING

Employees shall be provided with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Stair towers or ladders built into scaffold systems in accordance with USACE EM 385-1-1 Appendix J are required for work platforms greater than 6 m 20 feet in height. Contractor shall ensure that employees that are qualified perform scaffold erection. Do not use scaffold without the capability of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection plan. Minimum platform size shall be based on the platform not being greater in height than three times the dimension of the smallest width dimension for rolling scaffold. Some Baker type scaffolding has been found not to meet these requirements. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward. Special care shall be given to ensure scaffold systems are not overloaded. Outrigger brackets used to extend scaffold platforms on self supported scaffold systems for the storage of material is prohibited. The first tie-in shall be at the height equal to 4 times the width of the smallest dimension of the scaffold base.

3.5 EQUIPMENT

3.5.1 Material Handling Equipment

- a. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.

- b. The use of hooks on equipment for lifting of material must be in accordance with manufacturers printed instructions.

3.5.2 Weight Handling Equipment

- a. Cranes must be equipped with:

- (1) Load Indicating Devices (LIDs) and a Boom Angle or Radius Indicator,

- (2) or Load-Moment Indicating Devices (LMIs).

- (3) Anti-two-block prevention devices.

- (4) Boom Hoist Hydraulic Relief Valve, Disconnect, or Shutoff (stops hoist when boom reaches a predetermined high angle).

- (5) Boom Length Indicator (for telescoping booms).

- (6) Device to prevent uncontrolled lowering of a telescoping hydraulic boom.

- (7) Device to prevent uncontrolled retraction of a telescoping hydraulic boom.

- b. The Contractor shall notify the Contracting Officer, in advance, of any cranes entering the activity so that necessary quality assurance spot checks can be coordinated.

- c. The Contractor shall comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Erection shall be performed under the supervision of a designated person (as defined in ASME B30.5). All testing shall be performed in accordance with the manufacturers recommended procedures.

- d. The Contractor shall comply with ASME B30.5 for mobile cranes, and ASME B30.22 for articulating boom cranes.

- e. The presence of Naval station safety and health inspectors does not relieve the Contractor of an obligation to comply with all applicable safety regulations. The Government will investigate all complaints of unsafe or unhealthful working conditions received in writing from contractor employees, federal civilian employees, or military personnel.

- f. Each load shall be rigged/attached independently to the hook/master-link in such a fashion that the load cannot slide or otherwise become detached. Christmas-tree lifting (multiple rigged materials) is not allowed.

- g. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and

shall follow the requirements of ASME B30.5 or ASME B30.22 as applicable.

- h. Crane supported work platforms shall only be used in extreme conditions if the Contractor proves that using any other access to the work location would provide a greater hazard to the workers. Personnel shall not be lifted with a live hoist or friction crane.
- i. A fire extinguisher having a minimum rating of 10BC and a minimum nominal capacity of 5lb of extinguishing agent shall be available at all operator stations or cabs of cranes. Portable fire extinguishers shall be inspected, maintained, and recharged as specified in NFPA 10, Standard for Portable Fire Extinguishers.
- j. All employees shall be kept clear of loads about to be lifted and of suspended loads.
- k. A weight handling equipment operator shall not leave his position at the controls while a load is suspended.
- l. A Contractor Crane Operation Checklist shall be used by the CQC representative during oversight of contractor crane operations (refer to COE EM-385-1-1 Appendix H and ROICC for copies).
- m. Only contractor crane operators who have met the requirements of 29 CFR 1910.94, 29 CFR 1910.120, 29 CFR 1926.65, 29 CFR 1926.502(f), COE EM-385-1-1, ASME B30.5, and ASME B30.22 and other local and state requirements shall be authorized to operate the crane.
- n. Cribbing shall be utilized by the Contractor when performing lifts on outriggers.
- o. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.
- p. A physical barricade must be positioned to prevent personnel from entering the tailswing area of the crane.
- q. A substantial and durable rating chart containing legible letters and figures shall be provided with each crane and securely mounted onto the crane cab in a location allowing easy reading by the operator while seated in the control station.
- r. Certification records which include the date of inspection, signature of the person performing the inspection along with the serial number or other identifier of the crane which was inspected. This record will always be available for review by contracting officer personnel.
- s. Written reports listing the load test procedures utilized along with any repairs or alterations performed on the crane will be available for review by the contracting officer personnel.
- t. Contractor shall certify that all of the crane operators have been

trained not to bypass safety devices (e.g. anti-two block devices) during lifting operations.

3.6 Excavations

The competent person for excavation performed as a result of contract work shall be on-site when work is being performed in excavation, and shall inspect excavations prior to entry by workers. The competent person must evaluate for all hazards, including atmospheric, that may be associated with the work, and shall have the resources necessary to correct hazards promptly. Prior to digging the appropriate digging permit must be obtained. All underground utilities in the work area must be positively identified by a utility locating service and coordinated with Station Utility Departments. The Contractor must physically verify underground utility locations by hand digging using wood or fiberglass handled tools when any adjacent construction work is expected to come within three feet of the underground system. If construction is parallel to an existing utility the utility shall be exposed by hand digging every 30 m (100 feet) if parallel within 1500 m 5 feet of the excavation. Trench and shoring systems must be identified in the accepted safety plan and activity hazard analysis. Extreme care must be used when excavating near direct burial electric underground cables. Trenching machines with digging chain drives shall be operated only when the spotters/laborers are in plain view of the operator. Operator and spotters/laborers shall be provided training on the hazards of the digging chain drives with emphasis on the distance that needs to be maintained when the digging chain is operating. Documentation of the training shall be kept on file in the project site office or trailer.

3.7 ELECTRICAL

3.7.1 Conduct of Electrical Work

Underground electrical spaces must be certified safe for entry before entering to conduct work. Cable intended to be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for electrical systems. Arrangements are to be coordinated with the Contracting Officer and Station Utilities for identification. The Contracting Officer will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified. Perform all high voltage cutting remotely. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized substations, only qualified electrical workers shall be permitted to enter. When work requires Contractor to work near energized circuits as defined by the NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. Insulating blankets, hearing protection, and switching suits may be required, depending on the specific job and as delineated in the Contractor AHA.

3.7.2 Portable Extension Cords

Portable extension cords shall be sized in accordance with manufacturer ratings for the tool to be powered.

3.8 WORK IN CONFINED SPACES

Comply with the requirements in Section 06.I of COE EM-385-1-1. Any potential for a hazard in the confined space requires a permit system to be used.

- a. Entry Procedures. Prohibit entry into a confined space by personnel for any purpose, including hot work, until the qualified person has conducted appropriate tests to ensure the confined or enclosed space is safe for the work intended and that all potential hazards are controlled or eliminated and documented. (See Section 06.I.05 of COE EM-385-1-1 for entry procedures.) All hazards pertaining to the space shall be reviewed with each employee during review of the AHA.
- b. Forced air ventilation is required for all confined space entry operations and the minimum air exchange requirements must be maintained.
- c. Ensure the use of rescue and retrieval devices in confined spaces greater than 1.5 m 5 feet in depth. Conform to Sections 06.I.09, 06.I.10 and 06.I.11 of COE EM-385-1-1.
- d. Sewer wet wells require continuous atmosphere monitoring with audible alarm for toxic gas detection.
- e. Include training information for employees who will be involved as entrant attendants for the work. Conform to Section 06.I.06 of COE EM-385-1-1.
- f. Entry Permit. Use ENGFORM 5044-R or other form with the same minimum information for the Daily Confined Space Entry Permit, completed by the qualified person. Post the permit in a conspicuous place close to the confined space entrance.

3.9 CRYSTALLINE SILICA

Grinding, abrasive blasting, and foundry operations of construction materials containing crystalline silica, shall comply with OSHA regulations, such as 29 CFR 1910.94, and COE EM-385-1-1, (Appendix C). The Contractor shall develop and implement effective exposure control and elimination procedures to include dust control systems, engineering controls, and establishment of work area boundaries, as well as medical surveillance, training, air monitoring, and personal protective equipment.

3.10 HOUSEKEEPING

3.10.1 Clean-up

All debris in work areas shall be cleaned up daily or more frequently as necessary. Construction debris may be temporarily located in an approved location, however garbage accumulation must be removed each day.

3.10.2 Dust Control

In addition to the dust control measures required elsewhere in the contract documents dry cutting of brick or masonry shall be prohibited. Wet cutting must address control of water run off.

3.11 ACCIDENT SCENE PRESERVATION

For serious accidents, and accidents involving weight handling equipment, ensure the accident site is secured and evidence is protected remaining undisturbed until released by the Contracting Officer.

3.12 FIELD QUALITY CONTROL

3.12.1 Inspections

Include safety inspection as a part of the daily Quality Control inspections required in Section 01450, "Quality Control".

3.13 FLAMMABLE AND COMBUSTIBLE LIQUID HANDLING AND STORAGE

3.13.1 Safety Gas Containers

Handling of flammable and combustible liquids shall be in safety containers with flame arresters, with not more than 19 L 5 gallons capacity, having a spring-closing lid and spout cover and designed to safely relieve internal pressures under fire exposures. Flammable and combustible Liquids shall be stored in separate NFPA approved storage cabinets 15 m 50 feet away from any sources of ignition with suitable NO SMOKING OR OPEN FLAME signs posted in all such areas.

NOTE: Suggestions for improvement of this specification will be welcomed using the Navy "Change Request Forms" subdirectory located in SPECSINTACT in Jobs or Masters under "Forms/Documents" directory or DD Form 1426. Suggestions should be forwarded to:

Commander
Naval Facilities Engineering Command
Engineering Innovation and Criteria Office, Code EICO
1510 Gilbert Street
Norfolk, VA 23511-2699

FAX: (757) 322-4416 or
Email: cgs@efdlant.navfac.navy.mil

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